

**ABSTRACT****APPARATUS FOR DETECTING AND RECOVERING DATA**

5 An apparatus for detecting and recovering data embedded in information material, the data having been embedded in the material in a transform domain representation by arranging for the data to modulate a predetermined data sequence to form modulated data and combining the modulated data with the material. The apparatus comprises a transform processor operable to transform the material into the transform domain representation, and a correlation processor operable to correlate 10 transform domain data symbols bearing the modulated data with a reproduced version of the predetermined data sequence to form a correlation output signal and to recover the embedded data from the correlation output signal. The correlation processor is operable to repeat the correlation for transform domain data symbols and data symbols of the predetermined data sequence for each of a plurality of start positions in the 15 transform domain. The start positions represent at least one relative possible shift of the transform domain data, and if the shift of the transform domain data represents a loss of transform domain symbols, corresponding symbols are omitted from the predetermined data sequence. The lost transform domain data symbols and the corresponding symbols of the predetermined data sequence are not included in 20 calculating the correlation output signal.

[Fig 11 and 14]